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INFORMATION REPORT

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PREPARED AND DISSEMINATED BY
CENTRAL INTELLIGENCE AGENCY

COUNTRY
Hungary

SUBJECT
The Electric Power System in Hungary / Describing typical Power plant (including sketch), substation and high tension

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4 Oct 1957

NO. OF PAGES 3 | NO. OF ENCLS. 6

SUPPLEMENT TO REPORT #

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THIS IS UNEVALUATED INFORMATION

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following electric power installations in Hungary.

Point 6: Banhida (4735N/1847E) Power Station provides electric power for the coal mines and small factories in the area. It also provides electric power for the electric railroad running from the East Austrian border through Budapest (4730N/1905E) to Hatvan (4740N/1941E). It has five 30 thousand KVA generating units.

8: VAC (4746N/1908E) Transformer Sub-station provides current for an infra-red photographic equipment factory located E of the town, in addition to providing power for the local area.

11: Matra (4750N/2000E) Power Station has five boilers and six generating units, each with a capacity of 30 thousand KW. In addition to furnishing for local area, this station furnishes power to all factories in the locality.

22: Debrecen (4731N/2139E) Transformer Sub-station. For single line diagram see Enclosure F.

25: Ajka (4706N/1734E) Power Station provides all electric power for the oil fields E of the town in addition to local needs.

27: Inota (4712N/1810E) Power Station provides all electric power for the largest aluminum factory in Hungary located in the center of town and to the chemical works located SE of town in addition to local requirements.

31: Szolnok (4710N/2011E) Transformer Sub-station. For single line diagram see Enclosure E.

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Point 37: Pecs (4605N/1813E) Power and Transformer Sub-stations provide all electric power for the Soviet controlled coal mines in the Area. The Soviets have designed and are ready to build a nuclear reactor power station NW of the town area. The Soviets are mining uranium and beryl in this area.

2. [redacted] information on Budapest power installations. [For [redacted] sketch of the Grid System of Budapest see Enclosure A:] The Csepel Power and Transformer Sub-station provides power for the Csepel Steel Works and the Truck Factory located near the Steel Works. The Budaors Transformer Sub-station provides power to the "President Kovacs" Tank Factory, located in the woods near Budaors, and for the Shell Factory associated with the Tank Factory. The Kalenfold Power Station provides power for a secret factory E of Godollo (4736N/1921E). Soviet and Hungarian Military visit this power station very often.

3. [redacted] a typical power plant layout in Hungary. [For [redacted] sketch of layout see Enclosure B:]

Point 1: Cooling Towers, constructed of brick, approximately 60 feet high, wide at the base, tapering to the top.

2: Smokestacks

3: Power Distribution Lines

4: Outdoor Transformer and Switch-yard

5: Water Supply Pool.

6: Loading Platform with bucket conveyor coming from the Boiler House, Point 8. Ashes were brought from the Boiler House to this platform and then loaded onto railroad cars.

7: Loading Platform with bucket conveyor going into the Boiler House, Point 8. Coal brought in on railroad, Point 11, was transported into the Boiler House.

8: Boiler House and Generator Building. Smokestacks, Point 2, atop this building always coincided in number to Cooling Towers, Point 1.

9: Power Distribution Area.

10: Power Plant Offices

11: Railroad for bringing coal and other supplies into power plant.

12: Fence

13: Gate

This layout was standard throughout Hungary. The only difference was in the size of individual buildings and in the number of smokestacks and cooling towers present in any particular power plant. Power plants throughout Hungary operated on a three shift basis, seven days a week. About 40 persons were employed per shift, of which about 20 were skilled and four females for typing. All power stations had a reinforced concrete, underground air-raid shelter within the power plant area, usually in the basement of the Boiler House and Generator Building.

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All power plant boilers were coal-fired, and varied from three to five boilers depending on the size of the plant and the power requirements levied upon it. All power plants throughout Hungary are thermal type and supply only alternating current. Transformers and circuit breakers are of poor quality and very frequently break down. In the power plants [redacted] one-third of the turbo-generators inoperative because of break-down. The power plant at Banhida has five generating units, the one at Matra has six generating units; all others have only four. Each generating unit has a capacity of 30 thousand KVA. At transformer sub-stations operate on a three shift-seven-days per week basis. Each shift consists of eight persons of which four are skilled workers.

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4. [For [redacted] sketch of high-tension towers see Enclosure C.] In general, all towers are placed about 120 meters apart, connected to each other by an aluminum-alloy stranded shielding wire about 3/4 inch in diameter. Tower "A" [Enclosure C] is about 16 meters high, constructed of steel, and used to carry 120 KV, double line of three conductors each. Tower "B" [Enclosure C] is about 16 meters high, steel construction, and used to carry 120 KV, single line of three conductors. Tower "C" [Enclosure C] is about 14 meters high, with same construction and use as Tower "B". Tower "D" [Enclosure C] is about 12 meters high, with same construction and use as Tower "B". The wire distance at 120 KV = 220 cm phase to phase. All towers are painted grey-green.

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5. [For [redacted] sketch of Insulators used on High Tension Towers see Enclosure D.] The Clevis Suspension Type porcelain insulator is used almost exclusively. For 120 KV, they used four insulators. Each insulator assembly was provided with a circular Corona shield, and one petticoat. The other type of insulator was a one-piece suspension type, about 2½ feet long, with 10 petticoats and a shield; this type was practically worthless.

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[Enclosures:

A - [redacted] sketch of Grid System in Budapest.

B - [redacted] sketch of Typical Power Plant Layout in Hungary.

C - [redacted] sketch of High Tension Towers in Hungary.

D - [redacted] sketch of Insulators used on High Tension Towers in Hungary.

E - [redacted] sketch of Single Line Diagram of the Szolnok Transformer Sub-station.

F - [redacted] sketch of Single Line Diagram of the Debrecen Transformer Sub-station.

[redacted]

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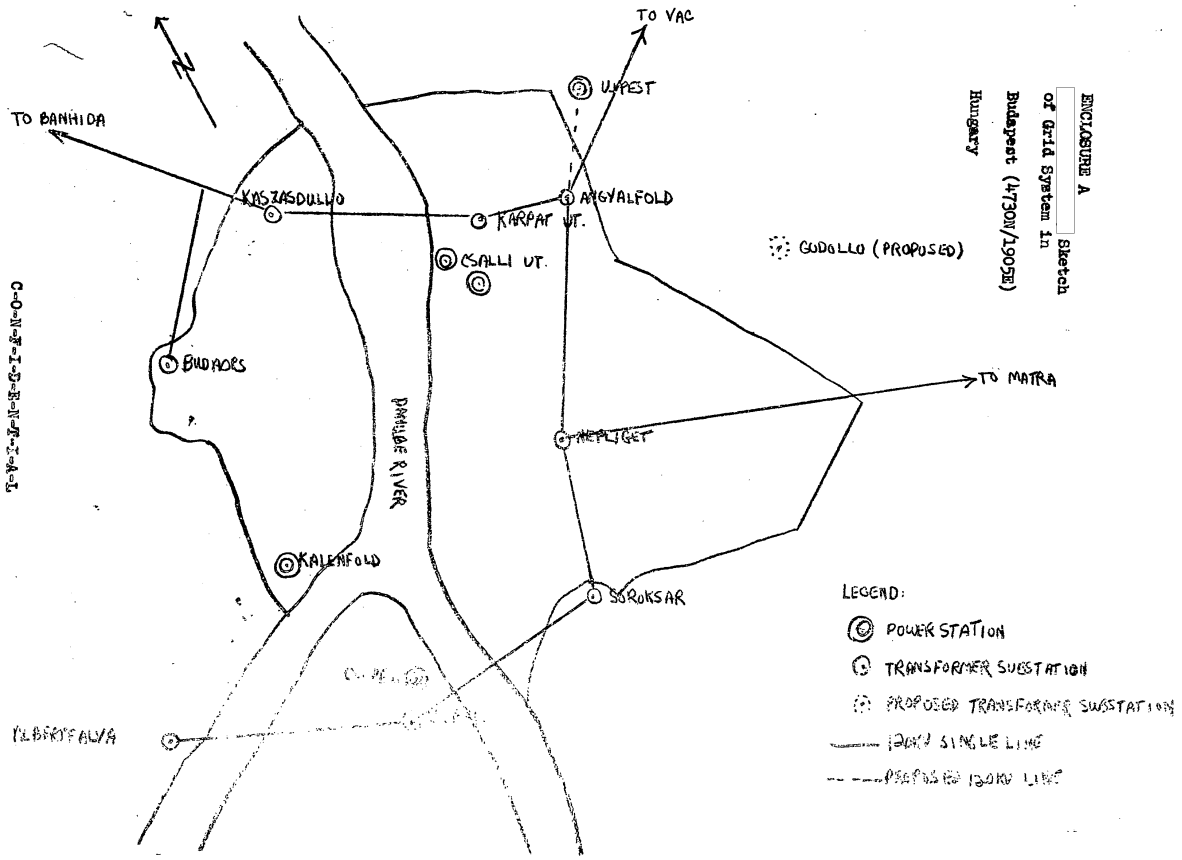

ENCLOSURE A
Sketch of Grid System in Budapest (47.30N/19.05E) Hungary

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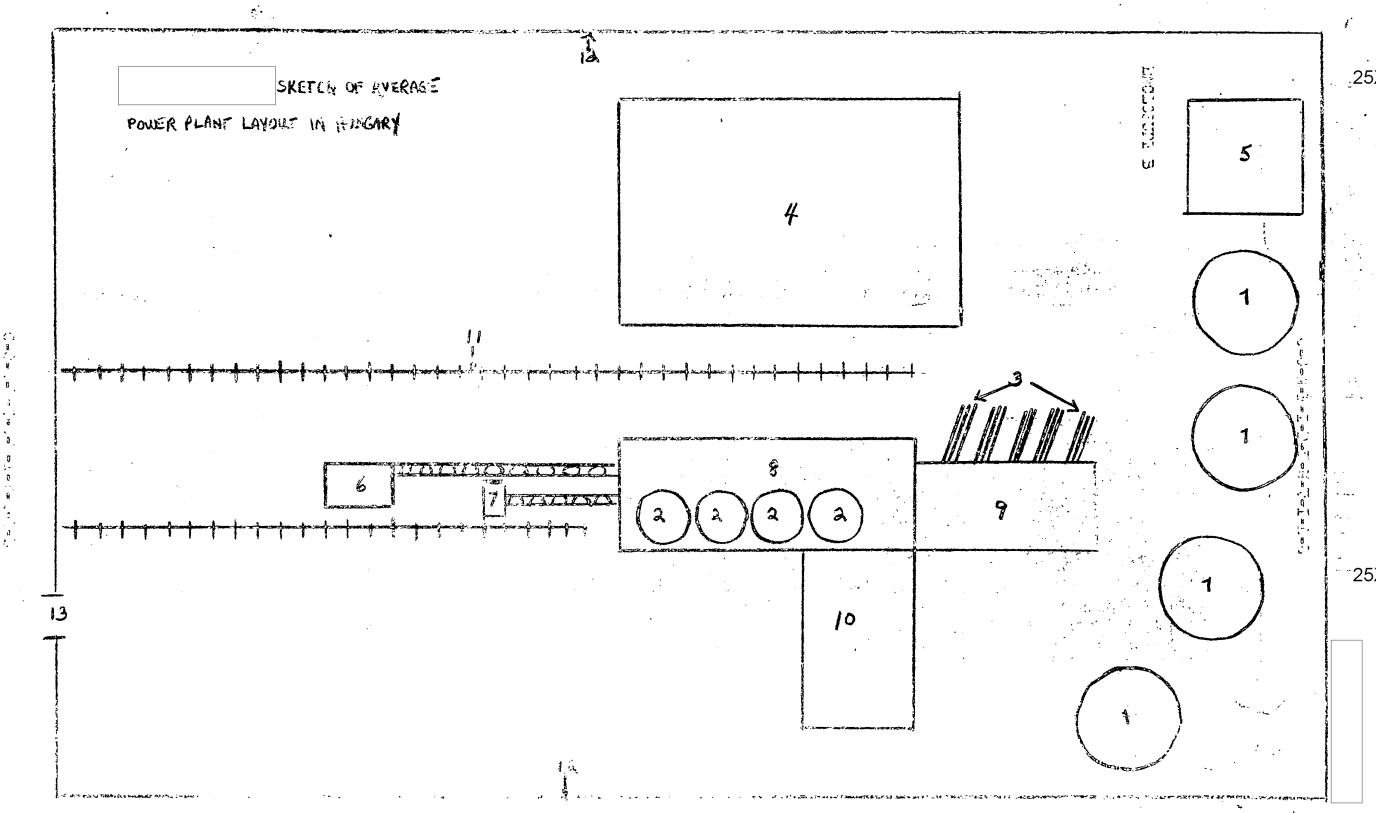

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ENCLOSURE C

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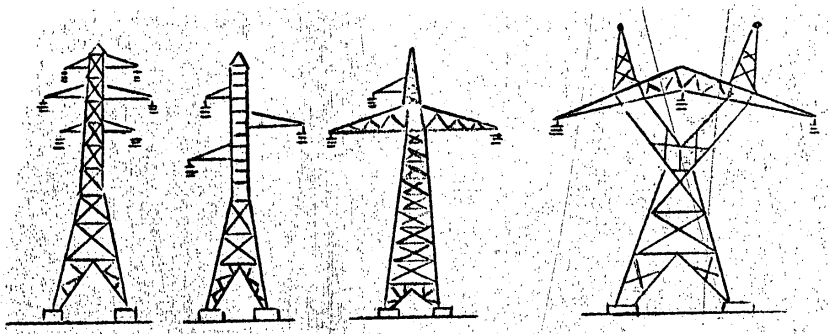
Sketch of
High Tension Towers in Hungary



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ENCLOSURE D

[redacted] Sketch of
Insulators Used on High Tension
Towers in Hungary

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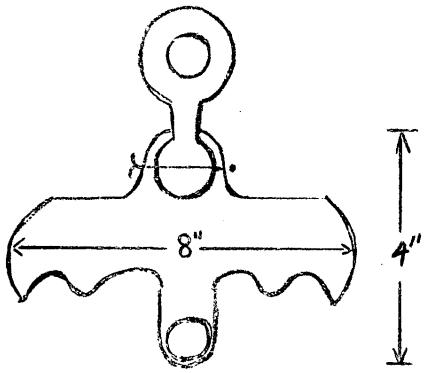

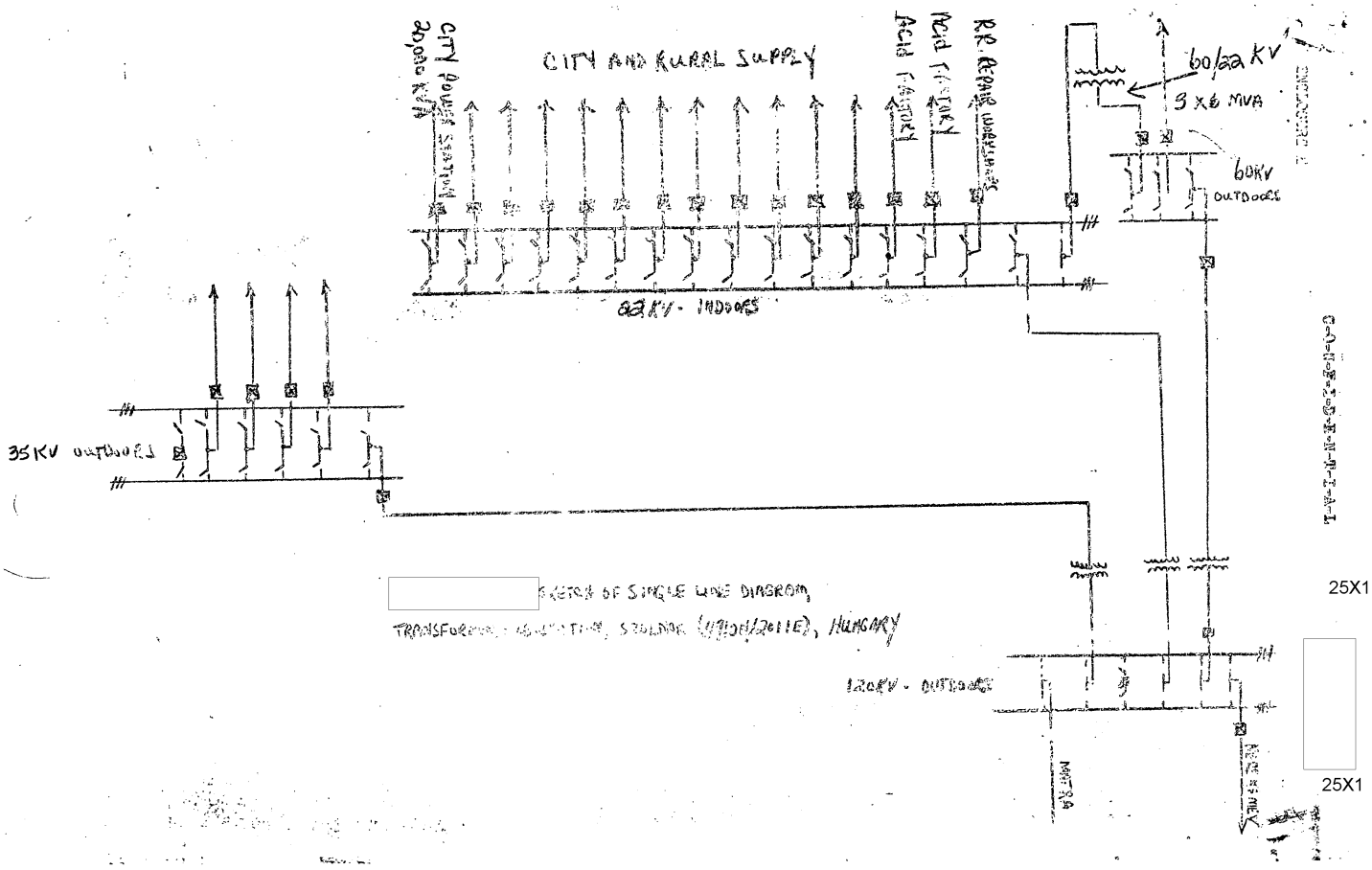

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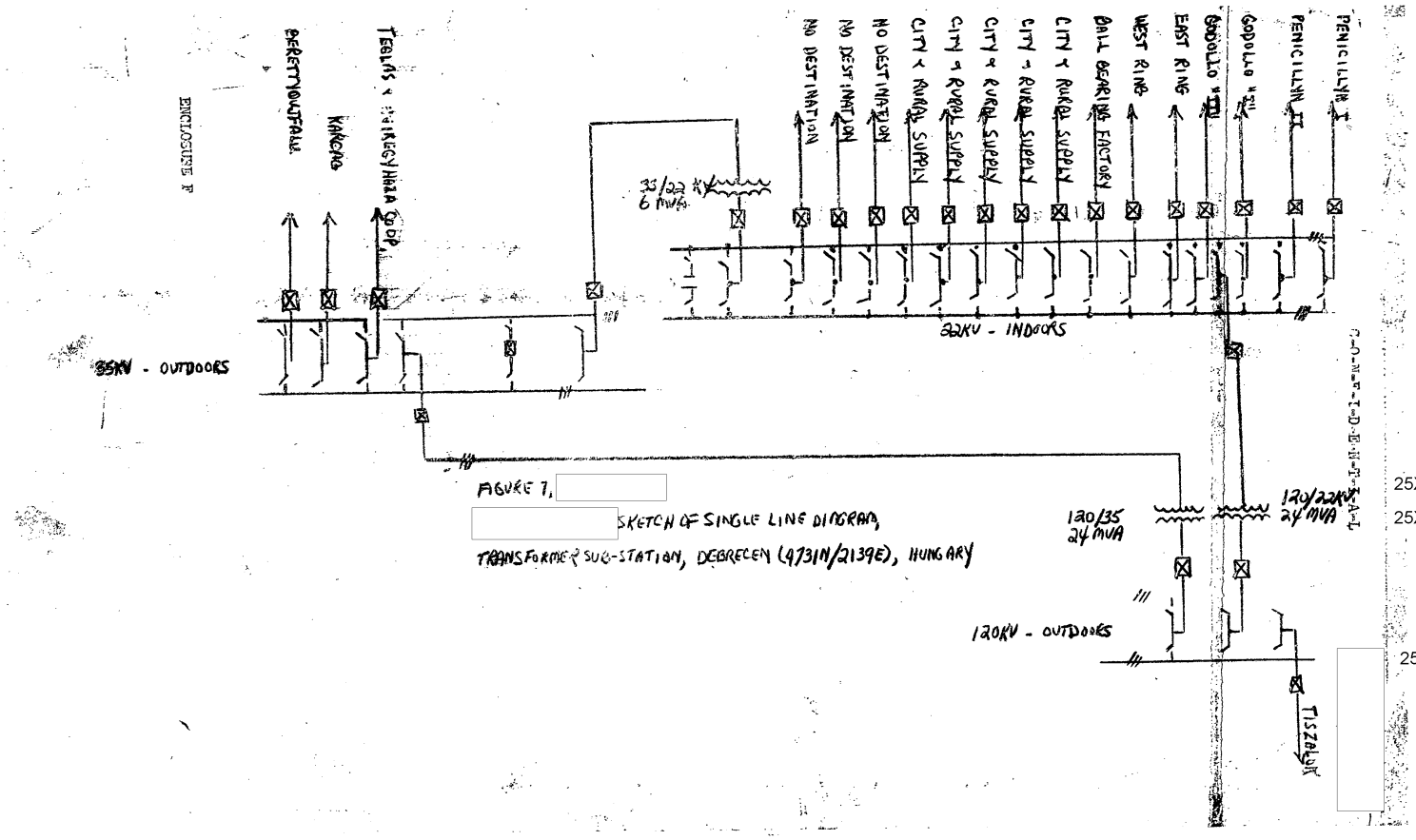

FIGURE 7,

SKETCH OF SINGLE LINE DIAGRAM,

TRANSFORMER SUB-STATION, DEBRECEN (4731N/2139E), HUNGARY

25X1

25X1

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48°30'N

16°E

OVERLAY [illegible] MAP OF HUNGARY

[illegible]

(1953; SCALE: 1:1,000,000

on file item to Report on the Electric Power System in Hungary.

110 KV TO CSR

120 KV TO CSR

220 KV TO CSR

1 HORVATKUT, 4749N/1722E
2 GYOR, 4741N/1738E
3 KOMAROM, 4745N/1806E
4 KISIGMAND, 4739N/1846E
5 TATABANYA, 4733N/1826E
6 BANHIDA, 4735N/1824E
7 DOROG, 4743N/1844E
8 VAC, 4746N/1908E
9 BUDAPEST, 4730N/1905E (See Figure 2, IR-/54-57)
10 ALBERTFALVA, 4726N/1902E
11 MATRA, 4750N/2006E
12 LORINCI, 4744N/1940E
13 HATVAN, 4740N/1941E
14 BALASSAGYARMAT, 4807N/1948E
15 BORSODNADASD, 4804N/2015E
16 OZD, 4753N/2018E
17 SAJOSZ, 4748N/2025E
18 SZERENCS, 4814N/2040E
19 DIOSGYOR, [illegible]06N/2041E
20 KESZTHELY, 4758N/2103E
21 TISZALUK, 4801N/2123E
22 VEREBELY, 4731N/2139E
23 KAZLAS, 4743N/2140E
24 NYIREGYHAZA, 4758N/2143E
25 AJKA, [illegible]04N/1734E
26 VASVILLA, 4712N/1808E
27 INOTA, 4712N/1810E
28 DUNAPENTELE, 4659N/1855E
29 KECSKEMET, 4654N/1941E
30 JASZBERENY, 4730N/1955E
31 SZOLNOK, 4710N/2011E
32 KARCAG, 4719N/2055E
33 MEZOTUR, 4700N/2038E
34 BEKESCSABA, 4639N/2105E
35 SOLTUT, 4640N/1651E
36 KAPOSVAR, 4621N/1747E
37 PECS, 4606N/1813E
38 SZOMLO, 4611N/1815E
39 SZEGED, 4628N/1841E
40 SZEGED, 4615N/2009E

25 Miles
25 Kilometers

CONFIDENTIAL

CONFIDENTIAL

22 KV TO CSR

LEGEND:

- POWER STATION
- TRANSFORMER SUBSTATION
- SWITCH STATION
- 120KV SINGLE LINE
- 120KV DOUBLE LINE
- 60 KV SINGLE LINE
- PROPOSED 220KV LINE
- PROPOSED 120KV LINE
- CORPORATION LINE, NOT IN GRID

22°40'E

46°N